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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/643,653	08/21/2000	Justus Petersson	2789-22	9851
23117	7590	02/08/2005	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			TON, ANTHONY T	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/643,653

Applicant(s)

PETERSSON ET AL.

Examiner

Anthony T Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 56-59 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10, 11, 13-15, 17-21, 31, 33-39, 42-46, 54, 55 and 60 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 12, 16, 23-30, 32, 40, 41 and 47-53 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____


PHIRIN SAM
PRIMARY EXAMINER

4u

DETAILED ACTIONS

Claim Objections

1. **Claim 54** is objected to because of the following informalities:

Term "the ratio" in line 3 is no antecedent basis for such a term in the claim.

Examiner suggests changing this term to "a ratio".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 2, 14 and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) **Claim 2** recites the limitation "the **entire** time interval" in line 3 is vague and indefinite. At what a time interval does such limitation refer to? Does it refer to the "a time interval of an established connection" as recited in line 7 of Claim 1? Please clarify.

b) **Claim 14** recites the limitation "the **entire** time interval" in line 2 is vague and indefinite. At what a time interval does such limitation refer to? Does it refer to the "during a connection" as recited in line 5 of Claim 13? Please clarify.

c) **Claim 60** recite the limitation "**said** IF measurement means" in line 16, the limitation "**said** IF handover request means" in line 23, and the limitation "**said** IF measurement trigger signal" in line 26. There are insufficient antecedent bases for these limitations in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-3, 5, 6, 8, 10, 11, 13-15, 17, 18, 20, 21, 31, 33-36, 38, 39, 42-46 and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by *Willars* (US Patent No. 6,597,679).

a) **In Regarding to Claim 1:** *Willars* disclosed a subscriber station of a mobile communication system having at least one base transceiver station and a network control means (see Fig.3: *MS, BS_A, BS_B and RNC*), including an inter-frequency measurement means adapted to perform IF measurements (see col.3 lines 61-67), comprising:

a time interval signal detection means adapted to detect in a transmission from said network control means (see Fig.3: *dual receivers 31A and 31B, and controller 33 of the MS; and the Radio Network Controller*) an IF measurement time interval indication signal indicating a time interval of an established connection between said subscriber station and said base

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transceiver station in which IF measurements are to be carried out by said subscriber station (see Fig.5 and col.7 lines 27-65: in which, the MS 100 receives ordinary frame 103, followed by a compressed frame 104 having frame duration 104A; the remaining time within the one-frame time allotted for the data in frame 104 is the slot 104B (hence the slot 104B is an IF measurement time interval indication signal, wherein its time interval is the length of the slot 104B; it is equal 10 ms – the length of the compressed slot 104); furthermore, in Fig.6 shows the MS 100 receives information 109 from the Base station 110 during the slot period between frames 104 and 105 (hence, the information 109 would be considered as an IF measurement time interval indication signal of the instant claim); and col.7 lines 43-65 (IF measurements are carried out by the subscriber station)), wherein said IF measurement means is adapted to perform said IF measurements in said time interval indicated in said IF measurement time interval indication signal (see Fig.7: block measurement 206).

b) In Regarding to Claim 2: Willars further disclosed said IF measurement means is adapted to carry out said IF measurements over an entire time interval (see col.7 lines 46-48: the interruption for that measurement is identified as the slot that occurs at the junction between slots 104 and 105 (hence, an entire time interval)).

c) In Regarding to Claim 3: Willars further disclosed said IF measurement means is adapted to start performing said IF measurements in said time interval in response to an IF measurement trigger signal (see Fig.5: slot 104, or Slot Spec 204 in Fig.7 (an IF measurement trigger signal); and see col.7 lines 59-61 (starting performing IF measurements)).

d) In Regarding to Claim 5: Willars further disclosed said IF measurement trigger signal is generated by an IF handover means when said IF handover means determines that

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transmission conditions in said mobile communication system necessitate an IF handover of said subscriber station (*see diversity handoff control in box 36 located inside RNC in Fig.3; this means that an IF measurement trigger signal is generated by an IF handover means; and please see MS and BS 54 in Fig.4 (transmission conditions necessitated an IF handover of the MS)*).

e) **In Regarding to Claim 6:** *Willars* further disclosed said IF handover means is located in a network control means of said mobile communication system (*see box 36 inside RNC in Fig. 3*) and is adapted to transmit said IF measurement trigger signal to said subscriber station via a base transceiver station in response to determining a network-evaluated handover (*see Slot Spec 204, BS1, and MS 100 in Fig 7*).

f) **In Regarding to Claim 8:** *Willars* further disclosed said subscriber station comprises a connection quality monitoring means adapted to monitor the quality of service on the established communication connection and to transmit information of the quality of service to said network control means (*Willars inherently disclosed a MS that comprises a connection quality monitoring means as the instant claim via a diversity combiner means 33, a transmitter 30, and a controller 32 located inside the MS in Fig.3 for a purpose of quality communications. Willars also disclosed about a quality of service for a MS as the MS roams from cell to cell (see col.3 lines 9-17; and col.5 line 60 – col.6 line 3 for the mobile station would be better serviced). Therefore, it is inherently that Willars does disclose all subject matters of the claimed limitations of the Claim 8*).

g) **In Regarding to Claim 10:** *Willars* further disclosed during said connection a loss-sensitive and/or delay-sensitive data transmission is performed between said base transceiver station and said subscriber station (*see col.3 lines 38-40: wherein a speech and video*

connections (loss-sensitive data), and data packet connection (delay-sensitive data transmission).

h) In Regarding to Claim 11: *Willars* further disclosed a data transmission between said subscriber station and said base transceiver station is carried out via a transmission of data frames including a data portion and a control portion (*see frames 102, data frame 103 and control portion 104 in Fig.5*), wherein said data transmission between said subscriber station and said base transceiver station is carried out in a compressed mode by compression of transmission data in said data portion in at least one time slot such that an idle time interval is provided in said time slot where no data transmission occurs (*see slot 104B in Fig.5 and slot 109 in Fig.6; col.2 lines 44-46; and col.9 lines 4-10, wherein no data transmission occurs in such an idle time interval*), wherein said subscriber station contains a compression-mode determining means for determining data transmission in said compressed mode and wherein said time interval corresponds to a number of data frames indicated in said IF measurement time interval indication signal and a number of idle time intervals of data frames where data transmission is carried in a compressed mode (*see slots 104B in Fig.5 wherein the period P is repeated (hence a number of ideal time intervals 104B); and col.4 lines 1-15: compressed mode*).

i) In Regarding to Claims 13-15, 17 and 20: The claimed subject matters of the claims 13-15, 17 and 20 are the same as that in claims 1-3, 5 and 8, respectively. Therefore, the rejections on the claims 1-3, 5 and 8 would apply to reject the claims 13-15, 17 and 20, respectively, in a method as taught.

j) In Regarding to Claim 18: *Willars* further disclosed said determining step whether transmission conditions in said mobile communication system necessitate an IF handover means

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is carried out by an IF handover request means located in a network control means of said mobile communication system (*see box 36 inside RNC in Fig. 3*) and is adapted to transmit said IF measurement trigger signal to said subscriber station via a base transceiver station in response to determining a network-evaluated handover (*see Fig.5: 104 (trigger signal), and see Slot Spec 204, BS1, and MS 100 in Fig 7*).

k) In Regarding to Claim 21: The subject matters of the claimed inventions of claim 21 are similar to that in claim 20 **except for** a base transceiver station. However, *Willars* also disclosed such a base transceiver station (*see Fig.3: Receiver and Transmitters in base stations A and B*). Therefore, the rejections on Claim 20 would apply to Claim 21, in the base transceiver station as taught.

l) In Regarding to Claim 31: *Willars* further disclosed a data transmission between said base transceiver stations and said subscriber station is carried out by transmitting data frames including a control portion and a data portion (*see frames 102, data frame 103 and control portion 104 in Fig.5*), wherein said network control means comprises a compressed mode operation means (*see boxes 34-36 inside RNC in Fig. 3*) adapted to compress in a compressed mode of operation data in said data portion in at least one time slot of a data frame such that an idle time interval is provided in said time slot where no data transmission occurs (*see slot 104B in Fig.5 and slot 109 in Fig.6; col.2 lines 44-46; and col.9 lines 4-10, wherein no data transmission occurs in such an idle time interval*), wherein said subscriber station comprises a compressed mode determining means for determining a data transmission in said compressed mode and wherein said time interval corresponds to a number of data frames indicated in said IF measurement time interval indication signal as well as a number of idle time portions of data

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frames where data transmission is carried in a compressed mode (*see slots 104B in Fig.5 wherein the period P is repeated (hence a number of ideal time intervals 104B); and col.4 lines 1-15: compressed mode*).

m) **In Regarding to Claim 33:** *Willars* disclosed a mobile communication system including at least one subscriber station including an inter-frequency measurement means adapted to perform IF measurements and at least one base transceiver station and a network control means for performing data transmissions with said subscriber station during a connection (*see Fig.7 for a mobile communication system*), comprising:

said network control means comprising an IF measurement time interval selecting means (*see boxes 34-36 in RNC in Fig.3*) adapted to select a time interval of said connection in which said subscriber station is to carry out IF measurements (*see slot 104B in Fig.5 and slot 109 in Fig.6 for a time interval*), and adapted to send to said subscriber station an IF measurement time interval indication signal indicating said time interval (*see Fig.5: 104 or slot spec 204 in Fig. 7*); and

said subscriber station comprising a time interval signal detection means adapted to detect in a transmission from said network control means said IF measurement time interval indication signal indicating said time interval, wherein said IF measurement means is adapted to perform said IF measurements in said time interval indicated in said detected IF measurement time interval indication signal (*please see the rejection on the subscriber station described in the claim 1*).

n) **In Regarding to Claim 34:** *Willars* further disclosed said IF measurement means is adapted to carry out said IF measurements over the entire time interval (*see slot 109 in Fig.6*

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wherein the MS switches from frequency F1 to frequency F2 to receive a transmission corresponding to base station 54 in Fig.4, and entire slot 109 is used for carrying out the IF measurement, see col.7 lines 59-61).

o) In Regarding to Claim 35: *Willars* further disclosed said IF measurement means is adapted to perform said IF measurements in response to an IF measurement trigger signal (*see 104 in Fig.5 (IF measurement trigger signal); and see box 206 IF measurements in Fig.7).*

p) In Regarding to Claims 36, 38 and 42: The subject matters of the claimed inventions of these claims are the same as that of claims 5, 8 and 10, respectively. Therefore, the rejections to claims 5, 8 and 10 would apply to reject the claims 36, 38 and 42, respectively, in a mobile communication system as taught.

q) In Regarding to Claim 39: The subject matters of the claimed inventions of claim 39 are similar to that in claim 38 **except for** a base transceiver station. However, *Willars* also disclosed such a base transceiver station (*see Fig.3: Receiver and Transmitters in base stations A and B*). Therefore, the rejections on Claim 38 would apply to Claim 39, in the base transceiver station as taught.

r) In Regarding to Claim 43: The subject matters of the claimed inventions of this claim are similar to that of claim 31. Therefore, the rejections to claim 31 would apply to reject this claim, in a system as taught.

s) In Regarding to Claim 44: *Willars* disclosed a network control means of a mobile communication system for controlling data transmissions between at least subscriber station and at least one base transceiver station on an established connection, comprising:

said network control means comprising an IF measurement time interval selecting means adapted to select a time interval of a connection in which said subscriber station is to carry out IF measurements and adapted to send to said subscriber station an IF measurement time interval indication signal indicating said time interval.

The claimed limitations of this claim are similar as that of the network control means recited in the claim 33 **except for** a claimed limitation of at least subscriber station in the mobile communication system. However, *Willars* also disclosed such a claimed limitation (*see mobile stations in col.6 lines 14-15, and see Fig.1*).

t) In Regarding to Claim 45: *Willars* further disclosed said network control means sends said IF measurement time interval indication signal together with an IF measurement trigger signal from said IF measurement time interval selecting means (*see Fig.5: slot 104 and interval 104B; in which, the slot 104 and the interval 104B would be considered as an IF measurement trigger signal and an IF measurement time interval indication signal of the instant claim, respectively*).

u) In Regarding to Claim 46: *Willars* further disclosed the network control means including: an IF handover request means adapted to determine whether transmission conditions in said mobile communication system necessitate an IF handover of said subscriber station and to generate said IF measurement trigger signal when it is determined that an IF handover is necessary (*see diversity handoff control in box 36 inside RNC in Fig.3; this means that a IF measurement trigger signal is generated by an IF handover means; and see MS and BS 54 in Fig.4 for transmission conditions necessitated an IF handover of the MS*).

v) **In Regarding to Claim 55:** all claimed subject matters of this claim have been disclosed in the claims 1 and 44. Therefore, the rejections to claims 1 and 44 would apply to reject this claim, in a mobile communication system as taught.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 7, 19 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Willars* (US Patent No. 6,597,679) in view of *the Admitted Prior Art (Figure 1 Prior Art)*.

a) **In Regarding to Claim 7:** *Willars* disclosed all aspects of this claim as set forth in claims 1 and 3.

Willars fails to explicitly disclose said IF handover means (HORM) is located in said subscriber station and is adapted to output said IF measurement trigger signal in response to determining a mobile-evaluated handover.

The Admitted Prior Art clearly discloses such a HORM that is located inside the MS (*see HORM inside MS in Fig.1 of Prior Art*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a HORM located inside the MS, as taught by *the Admitted Prior Art* with *Willars*, so that such a HORM can be monitored by the MS, and the MS can be roaming from cell to cell in a purpose of controlling handover inter-frequencies or inter-systems. A suggestion for a

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motivation to implement such a HORM located inside a MS is using the diversity combiner box 33 inside the MS in Fig.3 of Willars (*see Willars: col.5 lines 29-39*). Therefore, it would have been obvious to combine *the Admitted Prior Art* with *Willars* in the invention as specified in the claim.

b) In Regarding to Claim 19: The claimed subject matters of this claim are the same as that of the claim 7. Therefore, the rejections to claim 7 would apply to reject this claim, in a method as taught.

c) In Regarding to Claim 37: The claimed subject matters of this claim are the same as that of the claim 7. Therefore, the rejections to claim 7 would apply to reject this claim,, in a mobile communication system as taught.

9. **Claim 54** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Willars* (US Patent No. 6,597,679) in view of *Holma et al.* (US Patent No. 6,507,570) hereafter referred to as *Holma*.

In Regarding to Claim 54: *Willars* disclosed all aspects of this claim as set forth in claims 44-46; and

Willars further said IF handover request means comprises a transmission ratio determining means adapted to determine a ratio between transmitted and received data frames and the measurement time (*see diversity handoff control 36 in Fig.3*).

Willars fails to explicitly disclose said IF handover request means outputs said IF measurement trigger signal when said transmission/reception ratio is lower than a predetermined ratio.

Holma discloses such a handover request means outputs said IF measurement trigger signal when said transmission/reception ratio is lower than a predetermined ratio (*see col.6 lines 52-60*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a handover request means outputs said IF measurement trigger signal when said transmission/reception ratio is lower than a predetermined ratio, as taught by *Holma* with *Willars*, in order to monitor a handover from cell to cell properly. The motivation for doing so would have been to maintain a quality of a communication link between a base station and a mobile station in a communication system (*see Holma: col.5 lines 5-11*). Therefore, it would have been obvious to combine *Holma* with *Willars* in the invention as specified in the claim.

Allowable Subject Matter

10. **Claims 4, 9, 12, 16, 23-30, 32, 40, 41 and 47-53** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. **Claims 22 and 56-59** are allowed.

12. **Claim 60** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Remarks

13. Applicant's arguments filed on 6/30/2004 with respect to amended claims 1-60 have been considered but are moot in view of the new ground(s) of rejection.

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14. In order to response properly to the claims, the Examiner decides to change the rejections and add a new reference, *Holma et al.* (US Patent No. 6,507,570), which is a new discovered reference. Therefore, new ground(s) rejections are applied as set forth in the Office Action.

Examiner Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T. Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information In Regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by: *Qulu*
Anthony T. Ton
Patent Examiner
January 28 2005


PHIRIN SAM
PRIMARY EXAMINER